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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,973	08/17/2001	Yosuke Yamada	10417-091001 / F51-137504	5424
26211	7590	08/19/2004	EXAMINER	
FISH & RICHARDSON P.C. 45 ROCKEFELLER PLAZA, SUITE 2800 NEW YORK, NY 10111			MENON, KRISHNAN S	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,973

Applicant(s)

YAMADA, YOSUKE

Examiner

Krishnan S Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,4,5,7,9-11,13 and 14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 2,4,5,7,9-11,13 and 14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 2,4,5,7,9-11, 13 and 14 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2,4,5,7, 9-11,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-07-060074 in view of Zha (US 6,156,200).

Claims 2 and 14: JP-07-060074 teaches a filter device comprising a filter cylinder, plurality of hollow fiber membranes having a bundled end, and a free end spread in the fluid (see fig 1), injection means for injecting fluid and gas to the plurality of hollow fibers (4 - lumen side, 1-outside the lumen, fig 1) to agitate the hollow fibers. The floating bubbles spreading the fibers (into a broom form – as in claim 14) and removing the deposits is “process”. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re *Thorpe*, 777 F.2d 695, 698, 227 USPQ 964,

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966 (Fed. Cir. 1985). Re the limitation cylinder ID 1.5 to 3 times the hollow fiber bundle ID, which JP-74 in view of Zha does not specifically teach, it would be obvious to one of ordinary skill in the art at the time of invention to provide a cylinder ID sufficient to have sufficient volume capacity for the process fluid flow and free movement of the fibers inside the cylinder. Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Aller, 42 CCPA 824, 220 F.2d 454, 105 USPQ 233 (1955).

JP-74 does not teach means for injecting fluid and gas at the center portion of the hollow fibers to outwardly radiate the fluid and gas other than through the lumen of the hollow fibers. Zha teaches injecting liquid and gas under pressure to the center of the bundle of fibers through a porous pipe from the bottom of the vessel to outwardly radiate for agitating the fibers (see fig 5 and 6; abstract, and col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Zha in the teaching of JP-74 for introducing liquid and gas to the center of the bundle for proper distribution of liquid or gas for improved agitation of the hollow fibers.

Independent Claim 4 add further limitations of a funnel member in the bottom as in claim 4 (see fig 1). Deposits precipitating in the funnel is "process" – In re Thorpe.

Claim 5 adds the further limitation of a recovery chamber in the filter cylinder below the funnel chamber, which is not taught by JP-74. Zha provides a drain tank below the filter cylinder (see fig 5-schematic). It would be obvious to one of ordinary skill in the art at the time of invention that a chamber could be provided to collect the

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reject fluid below the funnel chamber of JP-74 for draining the reject fluid from the filter cylinder as taught by Zha.

Independent Claim 7 adds the further limitation of a backwash chamber for storing filtrate and for providing fluid for backwash (see 5, fig 1 of JP-74), and the filter as vertically disposed, in addition to the limitations of claim 5. Both JP-74 and Zha references teach the back-flush using filtrate. However, filtrate pressurized to flow into the plurality of fibers ... is process – in re Thorpe.

Claim 9 and 10 add further limitations over claims 2, 5 or 7 as follows: the injection pipe penetrating the bottom surface of the cylinder in claim 9; it extends 1/3 to 2/3 through the height of the bundle in claim 10. JP-74 does not teach an injection pipe. Zha teaches the injection pipe (see fig 5 and pipe 16, fig 6). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers because the injection pipe penetrates from the bottom and to a distance 2/3 of the bundle.

Claim 11 adds the further limitation over claims 1, 2, 4, 5 and 7 of injecting raw fluid and air through the injection pipe, which is not taught by JP-74. Zha teaches injecting air and fluid through the injection pipe (abstract; col 7 lines 13-23). It would be obvious to one of ordinary skill in the art at the time of invention to have the teaching of Zha in the teaching of JP-74 for proper liquid and gas distribution for improved agitation of the fibers by injecting fluid and air.

Independent Claim 13 recites the method of cleaning a filter using the apparatus described in claim 1. JP-07-060074 in view of Zha (US 6,156,200) teaches all the limitations of the claim including injecting fluid and gas for cleaning the membrane – see Zha abstract.

Response to Arguments

Applicant's arguments filed 2/9/04 have been fully considered but they are not persuasive.

Applicant's amendments to the claims are functional and related to process, and does not limit the claims by structure. Injecting "fluid and gas" and "fan out in to a broom" are functional, the structure in the references are capable of injecting fluid and gas together, and the references provide sufficient disclosure to provide mixture of fluid and gas. While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir.

1990). The process limitations of the claims are dealt with in the rejection. Argument that Zha ref teaches away from 'enabling the hollow fiber membranes to fan out' is not relevant because the Zha ref is used to show injection of fluid and gas through a central porous pipe. More over, the structure of the fibers bundle in the JP'074 ref would inherently make it fan out like a broom, even if the reference does not explicitly say so. "[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968); In re Lamberti, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976).

In response to the argument re the diameter of the filter cylinder, the size of volume of the cylinder is optimizable as described in the rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Krishnan Menon
Patent Examiner


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